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DESCRIPTION OF PLATES

PLATE I

Photographs of *Venus*

Showing the various phases and the relative sizes of the disk as presented in one revolution of the planet about the sun. By E. C. S.

Photographs of *Saturn*

(South pole at top)

By Lowell, Nov. 4, 1909.
By E. C. S., Oct. 11, 1911.
By E. C. S., Mch. 12, 1915.
Rings open to widest extent.
By E. C. S., Feb. 8, 1917.
By E. C. S., Dec. 23, 1912.
By E. C. S., Feb. 11, 1916.
By E. C. S., May 4, 1920.
Note the fading of the rings with the smaller tilt.

Apr. 28, 1921

These two pictures show the photographic appearance of the planet when the Earth is in the plane of the rings. The dark band medial across the ball is due to the rings. The rings were still visible on each side of the ball but too faint to show without a much longer exposure.

The photographs show the various aspects of the rings. The photograph shows that the ball shines through the outer ring where it crosses the ball, evidencing a greater sparcity of material particles in ring A than ring B. The inner or crepe ring is too faint to register in the photographs without an over exposure, consequently it can be seen only where it crosses the ball.

PLATE II

Photographs of *Jupiter*

(South pole at top)

E. C. S., Sep. 23, 1914. Satellite III to the right of the planet, and its shadow on left edge of disk.

E. C. S., Oct. 19, 1915. Nearly the same region of the planet as that above, but with marked changes chiefly in the N. tropical belt. Great Red Spot near left edge of disk.

E. C. S., Dec. 19, 1917. Compare this photograph with that of the same longitude in the one next below.

E. C. S., Mch. 19, 1920. Note that the equatorial belt has become almost entirely overspread with dark markings and that the N. tropical belt has greatly broadened and darkened, while the S. tropical belt has faded.

E. C. S., Mch. 7, 1920. Shows a series of unique dark spots along southern edge of equatorial belt. Compare with the same region twelve days later as shown below.

E. C. S., Mch. 19, 1920. Note disappearance of the dark spots, also the change over practically the whole S. tropical region in this short interval.

Plate III

Photographs of *Mars*

(South pole at top)

By P. L., July 11, 1907. Note that the south cap (Martian summer) is more brilliant and more definitely and regularly outlined than the northern (winter) one.

E. C. S., Feb. 11, 1916. Note the definite, regular outline and the increased brilliancy of the north (now summer) cap here, also the darkening of several of the canals preceding the Syrtis Major.

E. C. S., Apr. 23, 1920. Shows what appears to have been clouds over all but the northernmost tip of the Syrtis Major during the Martian morning. Note the increased intensity of the canals and other markings of the north and the fading of the dark markings at the south as compared with the 1907 photographs.

E. C. S., Sep. 30, 1909. Compare with pictures next below, note that the dark regions are darker in this case, with summer in the southern (upper) hemisphere.

E. C. S., Apr. 12, 1920. Shows clouds in both the Martian morning and evening (both east and west sides of the disk). Not so in the photographs above and below. The dark regions to the south are weaker than in the photographs next above.

E. C. S., July 26, 1917. Compare with above for absence of clouds on margins of the disk, and for changes in the polar caps and dark markings. (Photo, with 18-inch Amherst telescope—Lowell Expedition to the Andes in 1907.)

E. C. S., Apr. 23, 1920. Note the normally dark Syrtis Major merging gradually into the dark regions above it. Compare this with photograph next below and with that of the same date above.

E. C. S., May 26, 1920. Note that the Syrtis is almost completely disjointed from the dark region above it, probably by midday clouds. Also the whole south polar region is suffused with a lighter tint due undoubtedly to the same cause.

C. O. L., July 26, 1907. Note here the greater brilliancy of the south polar cap over that of the northern one, the former probably snow and the latter cloud-covered.

E. C. S., May 1, 1920. Compare the dull white of the south polar regions shown here with the brilliant and definite cap as shown above. This shows the difference between what is, by logical inference, snow and what is, by the same token, clouds of water vapor.